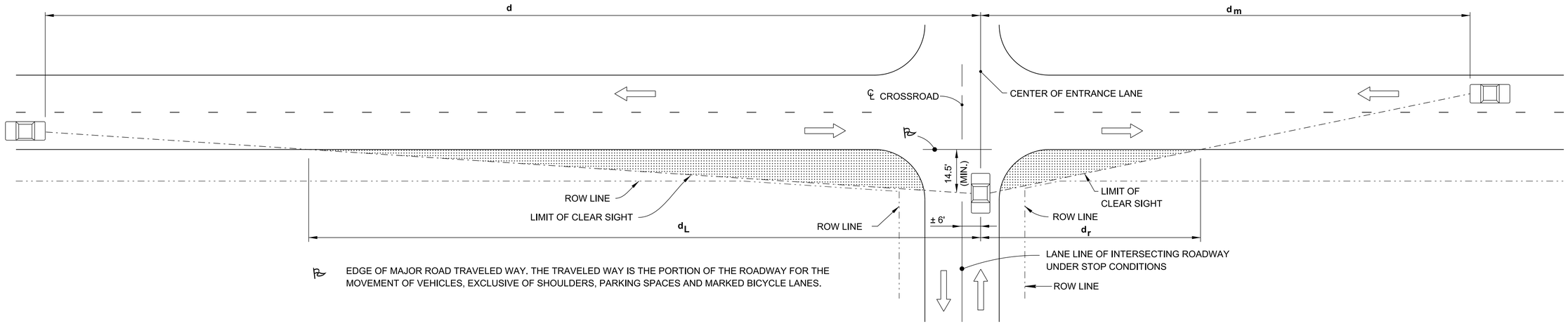

ORIGIN OF CLEAR SIGHT LINE ON MINOR ROAD, STOP CONDITIONS

GENERAL NOTES

1. FOR ALL NEW CONSTRUCTION AND RECONSTRUCTION PROJECTS, DESIGNERS SHOULD ENSURE THAT INTERSECTION SIGHT DISTANCE IS PROVIDED IN ADDITION TO ADEQUATE STOPPING SIGHT DISTANCE AT ALL INTERSECTIONS, RAILROAD CROSSINGS WITHOUT TRAIN ACTIVATED WARNING DEVICES, AND COMMERCIAL DRIVES. DESIGN INFORMATION AND VALUES FOR SIGHT DISTANCE AT INTERSECTIONS AND RAILROAD CROSSINGS CAN BE FOUND IN "A POLICY OF GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AASHTO, 2011 (GREEN BOOK), CHAPTER 9, INTERSECTIONS.

2. INTERSECTION SIGHT DISTANCE SHOULD ALSO BE PROVIDED AT ALL PRIVATE DRIVES AND FIELD ENTRANCES WHEN FEASIBLE. IN THE EVENT THAT INTERSECTION SIGHT DISTANCE CANNOT BE ACHIEVED, THE DESIGNER SHALL VERIFY THAT STOPPING SIGHT DISTANCE IS PROVIDED. INTERSECTION SIGHT DISTANCE SHOULD ALWAYS BE PROVIDED FOR A LEFT TURN MOVEMENT FROM THE MAJOR ROAD INTO A PRIVATE DRIVE OR FIELD ENTRANCE.

3. DESIGNERS SHOULD CONSIDER ALL FEATURES THAT COULD LIMIT ADEQUATE SIGHT DISTANCE INCLUDING BUILDINGS, PARKED VEHICLES, HIGHWAY STRUCTURES, ROADSIDE HARDWARE, HEDGES, TREES, BUSHES, UNMOWED GRASS, TALL CROPS, WALLS, FENCES, SLOPES, AND THE TERRAIN ITSELF. THE DETERMINATION OF WHETHER AN OBJECT CONSTITUTES A SIGHT OBSTRUCTION SHOULD CONSIDER THE HORIZONTAL AND VERTICAL ALIGNMENT OF BOTH INTERSECTING ROADWAYS, AS WELL AS THE HEIGHT AND POSITION OF THE OBJECT. IN MAKING THIS DETERMINATION, THE ASSUMED DRIVER'S EYE SHOULD BE 3'-6" ABOVE THE SURFACE OF THE INTERSECTING ROAD FOR PASSENGER CARS. FOR LANDSCAPING, THE MATURE SIZE OF THE ITEM SHALL BE USED.

4. IN AREAS OF LIMITED RIGHT-OF-WAY ACQUISITION, SUCH AS A CURB AND GUTTER SECTION, ADDITIONAL RIGHT- OF-WAY MAY NEED TO BE ACQUIRED TO ENSURE THAT INTERSECTION SIGHT DISTANCE CAN BE ACHIEVED OR MAINTAINED. IN THE EVENT THAT IT IS NOT FEASIBLE TO OBTAIN MINIMUM INTERSECTION SIGHT DISTANCE OR TO ACQUIRE ADEQUATE RIGHT-OF-WAY TO ENSURE INTERSECTION SIGHT DISTANCE CAN BE MAINTAINED, THE DESIGN MANAGER WILL DOCUMENT IN THE PROJECT FILE THE REASON AND STEPS TAKEN TO MITIGATE. INTERSECTION SIGHT DISTANCE IS NOT ONE OF THE TEN CONTROLLING ELEMENTS OF DESIGN AS DETAILED IN THE ROADWAY DESIGN GUIDELINES; THEREFORE, DESIGN EXCEPTIONS NEED NOT BE SUBMITTED.

5. DESIGNERS SHALL SHOW SIGHT LINES FOR ALL INTERSECTIONS IN THE DESIGN CADD FILE. SIGHT LINES SHALL ONLY BE SHOWN ON THE PRESENT AND/OR PROPOSED LAYOUT SHEETS WHEN RIGHT-OF-WAY IS REQUIRED FOR THE PURPOSE OF ESTABLISHING OR MAINTAINING INTERSECTION SIGHT DISTANCE. SIGHT LINES SHOULD ALSO BE SHOWN FOR ALL INTERSECTIONS AND DRIVES ON ALL LANDSCAPING PLANS.

6. THE MINIMUM DRIVER EYE SETBACK OF 14.5' FROM THE EDGE OF THE TRAVELED WAY MAY BE ADJUSTED ON ANY INTERSECTION LEG ONLY WHEN JUSTIFIED BY A SITE SPECIFIC FIELD STUDY OF VEHICLE STOPPING POSITION AND DRIVER EYE POSITION.

7. FOR SIGNALIZED INTERSECTIONS, SIGHT DISTANCES SHOULD BE DEVELOPED BASED ON AASHTO "CASE D- INTERSECTIONS WITH TRAFFIC SIGNAL CONTROL". AT SIGNALIZED INTERSECTIONS. THE FIRST VEHICLE STOPPED ON ONE APPROACH SHOULD BE VISIBLE TO THE DRIVER OF THE FIRST VEHICLE STOPPED ON EACH OF THE OTHER APPROACHES. LEFT-TURNING VEHICLES SHOULD HAVE SUFFICIENT SIGHT DISTANCE TO SELECT GAPS IN ONCOMING TRAFFIC AND COMPLETE LEFT TURNS. APART FROM THESE SIGHT CONDITIONS, THERE ARE GENERALLY NO OTHER APPROACH OR DEPARTURE SIGHT TRIANGLES NEEDED FOR SIGNALIZED INTERSECTIONS. HOWEVER, IF THE TRAFFIC SIGNAL IS TO BE PLACED ON TWO-WAY FLASHING OPERATION (I.E. FLASHING YELLOW ON THE MAJOR-ROAD APPROACHES AND FLASHING RED ON THE MINOR-ROAD APPROACHES) UNDER OFF-PEAK OR NIGHTTIME CONDITIONS, THEN THE APPROPRIATE DEPARTURE SIGHT TRIANGLES FOR CASE B, BOTH TO THE LEFT AND TO THE RIGHT, SHOULD BE PROVIDED FOR THE MINOR-ROAD APPROACHES. IN ADDITION, IF RIGHT TURNS ON A RED SIGNAL ARE TO BE PERMITTED FROM ANY APPROACH, THEN THE APPROPRIATE DEPARTURE SIGHT TRIANGLE TO THE LEFT FOR CASE B2 SHOULD BE PROVIDED TO ACCOMMODATE RIGHT TURNS FROM THAT APPROACH.

8. WHERE CURVATURE, SUPERELEVATION, ADVERSE SPLIT PROFILES OR OTHER CONDITIONS PRECLUDE THE USE OF STANDARD TREE SIZES AND SPACING, PROOF OF VIEW AND SIGHT DISTANCE RESTRAINTS SHOULD BE DETAILED IN THE PLANS.

9. INTERSECTION SIGHT DISTANCE VALUES ARE PROVIDED FOR PASSENGER VEHICLES, SINGLE UNIT (SU) VEHICLES AND COMBINATION VEHICLES. INTERSECTION SIGHT DISTANCE BASED ON THE PASSENGER VEHICLE IS SUITABLE FOR MOST INTERSECTIONS. WHERE SUBSTANTIAL VOLUMES OF HEAVY VEHICLES ENTER THE MAJOR-ROAD, SUCH AS FROM RAMP TERMINALS WITH STOP CONTROL OR ROADWAYS SERVING TRUCK TERMINALS, THE USE OF TABULATED VALUES FOR (SU) VEHICLES OR COMBINATION VEHICLES SHOULD BE CONSIDERED.

10. THE INFORMATION SHOWN IS INTENDED SOLELY FOR THE PURPOSE OF CLEAR SIGHT DEVELOPMENT AND MAINTENANCE AT INTERSECTING HIGHWAYS, ROADS AND STREETS, AND IS NOT INTENDED TO BE USED TO ESTABLISH ROADWAY AND ROADSIDE SAFETY EXCEPT AS RELATED TO INTERSECTION SIGHT CORRIDORS.

11. THE INTERSECTION SIGHT DISTANCE TABLES DO NOT SUPERCEDE AASHTO STOPPING SIGHT DISTANCE REQUIREMENTS. THE DESIGNER MUST ENSURE THAT STOPPING SIGHT DISTANCES ARE MET.

12. DETAILS ARE BASED ON "A POLICY OF GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AASHTO, 2011 (GREEN BOOK), CHAPTER 9, INTERSECTION SIGHT DISTANCE, CASES B AND F, AND THE DEPARTMENT PRACTICES FOR CHANNELIZED MEDIAN OPENINGS (LEFT TURNS ON MAJOR ROADWAYS).

LEGEND

AREAS FREE OF SIGHT OBSTRUCTIONS

DEFINITIONS

d = CLEAR LINE SIGHT DISTANCE

d_r = CLEAR LINE OF SIGHT DISTANCE TO THE RIGHT FROM THE MINOR ROADWAY

d_L = CLEAR LINE OF SIGHT DISTANCE TO THE LEFT FROM THE MINOR ROADWAY

DESIGN NOTES

A. DETAILS APPLY TO BOTH RURAL AND URBAN INTERSECTIONS UNDER STOP SIGN CONTROL OR FLASHING BEACON CONTROL. FOR FULL SIGNAL CONTROLLED INTERSECTIONS SEE DESIGN NOTE NO 7.

B. INTERSECTION SIGHT DISTANCE (d) APPLIES TO NORMAL AND SKEWED INTERSECTIONS (INTERSECTING ANGLES BETWEEN 60° AND 120°), AND WHERE VERTICAL AND/OR HORIZONTAL CURVES ARE PRESENT. SIGHT DISTANCE (d) IS MEASURED ALONG THE MAJOR ROADWAY FROM THE CENTER OF THE ENTRANCE LANE OF THE MINOR ROADWAY TO THE CENTER OF THE NEAR APPROACH LANE (RIGHT OR LEFT) OF THE MAJOR ROADWAY. DISTANCES d_L AND d_r ARE MEASURED FROM THE CENTERLINE OF THE ENTRANCE LANE (CROSS ROAD) OF THE MINOR ROADWAY TO A POINT ON THE EDGE OF THE NEAR SIDE OUTER TRAFFIC LANE ON THE MAJOR ROADWAY. DISTANCE d_m IS MEASURED FROM THE CENTERLINE OF THE ENTRANCE LANE OF THE MINOR ROADWAY TO A POINT ON THE MEDIAN CLEAR ZONE LIMIT OR HORIZONTAL CLEARANCE LIMIT FOR THE FAR SIDE ROADWAY OF THE MAJOR ROADWAY.

C.
1. THE LIMITS OF CLEAR SIGHT DEFINE A CORRIDOR THROUGHOUT WHICH A CLEAR LINE OF SIGHT MUST BE PRESERVED. SEE VERTICAL LIMITS OF CLEAR SIGHT DETAIL ON SHEET RD11-SD-2.
2. CLEAR SIGHT MUST BE PROVIDED BETWEEN VEHICLES AT INTERSECTION STOP LOCATIONS AND VEHICLES ON THE MAJOR ROADWAY WITHIN DIMENSION 'd'.
3. SINCE OBSERVATIONS ARE MADE IN BOTH DIRECTIONS ALONG THE LINE OF SIGHT, THE REFERENCE DATUM BETWEEN ROADWAYS IS 3'-6" ABOVE RESPECTIVE PAVEMENTS.

D. BARRIER SYSTEMS WITHIN INTERSECTION SIGHT CORRIDORS, WHERE PENETRATION INTO THE CLEAR LINE OF SIGHT MIGHT OCCUR, SHALL BE LOCATED TO PROVIDE THE LEAST ADVERSE AFFECT PRACTICAL.

E. ALL PROPERTY NEEDED TO ACHIEVE SIGHT DISTANCE AT INTERSECTIONS SHOULD BE ACQUIRED AS RIGHT-OF-WAY.

F. SIGHT DISTANCE VALUES IN THESE STANDARD DRAWINGS ARE APPROXIMATE FOR GENERALLY FLAT AREAS WHERE THE ROADWAY GRADES ARE IN THE APPROXIMATE RANGE OF 0% TO 6%. FOR LOCATIONS WHERE ROADWAYS ARE CURVED OR WITH GRADES GREATER THAN 6%, THE DESIGNER IS DIRECTED TO ENSURE THAT STOPPING SIGHT DISTANCES COMPLY WITH "A POLICY OF GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AASHTO, 2011 (GREEN BOOK) AS CURRENTLY ADOPTED BY TDOT.

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

INTERSECTION SIGHT DISTANCE DESIGN AND GENERAL NOTES

01-01-2019 | RD11-SD-1

NOT TO SCALE